



MS APPEAL BRIEF - PATENTS
PATENT
0020-4834P

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IN THE U.S. PATENT AND TRADEMARK OFFICE

In re application of Before the Board of Appeals
Kazuo ISHIWARI et al. Appeal No.:
Appl. No.: 09/787,303 Group: 1772
Filed: March 16, 2001 Examiner: J. J. RHEE
Conf.: 9616
For: POLYTETRAFLUOROETHYLENE BLOCK-SHAPED MOLDED
ARTICLE AND METHOD OF PRODUCING THE SAME

APPEAL BRIEF TRANSMITTAL FORM

MS APPEAL BRIEF - PATENTS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

September 1, 2004

Sir:

Transmitted herewith is an Appeal Brief (in triplicate) on behalf of the Appellants in connection with the above-identified application.

☐ The enclosed document is being transmitted via the Certificate of Mailing provisions of 37 C.F.R. § 1.8.

A Notice of Appeal was filed on July 2, 2004.

☐ Applicant claims small entity status in accordance with 37 C.F.R. § 1.27

The fee has been calculated as shown below:

☐ Extension of time fee pursuant to 37 C.F.R. §§ 1.17 and 1.136(a) - \$0.00.

☒ Fee for filing an Appeal Brief - \$330.00 (large entity).

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Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By 

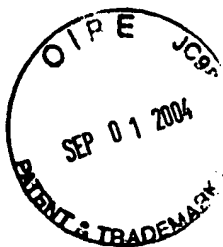
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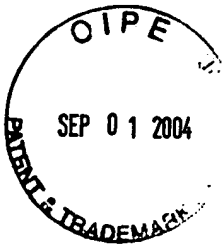
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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

September 1, 2004

Sir:

Pursuant to the Notice of Appeal filed on July 2, 2004, the following Appeal Brief is respectfully submitted in connection with the above-identified application in response to the final rejection of claims 1-3 and 9-18 dated March 2, 2004.

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I. Real Party in Interest

The real party in interest is Daikin Industries, Ltd., assignee of all right and title in the claimed invention. The assignment of said right and interest was recorded on October 11, 2001, at Reel 012052, Frame 0466 to Daikin Industries, Ltd.

II. Related Appeals and Interferences

There are no related appeals or interferences pending for the present application.

III. Status of Claims

Claims 1-3 and 5-18 remain pending in the present application. Claims 4 and 19 have been previously canceled. Claims 5-8 remain withdrawn as being directed to non-elected subject matter (see the Office Action of June 27, 2002, and the Restriction Requirement of May 9, 2002) and are not at issue in the present appeal. Though claim 9 was withdrawn in the Office Action of June 27, 2002, this was in error. Only claim 8 was added in Appellants' reply of June 10, 2002, and not claim 9. Thus, the Office Action of June 27, 2002 withdrew claim 8 and not claim 9. Claim 9 was added in Appellants' reply of December 27, 2002, and the patentability thereof was considered by the Examiner (and not withdrawn) in the next Office Action of March 10, 2003 and every Office Action thereafter. The rejection of claim 9

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is also being appealed herein. Overall, the rejection of claims 1-3 and 9-18 are being appealed herein. Claims 1 and 18 are independent claims.

Claims 1-3 and 9-18 stand rejected under 35 U.S.C. § 103(a), in the final Office Action dated March 2, 2004, as being unpatentable over Ebnesajjad '639 (U.S. Patent Number 5,683,639). Though the March 2, 2004, Office Action lists only claims 18-19 as being finally rejected in paragraph 2, page 2 of the Office Action, it has been clarified during the May 27, 2004 Interview and in Appellants' response of May 28, 2004 (at page 11 of 26) that claims 1-3 and 9-19 are at issue, and not just claims 18-19. Claims 1-3 and 9-19 are also listed on the PTO-326 form under "Disposition of Claims" as a part of the March 2, 2004 Office Action.

IV. Status of Amendments

The Office Action finally rejecting claims 1-3 and 9-18 is dated March 2, 2004. All replies filed subsequent to the final rejection as filed by Appellants have been acknowledged by the USPTO, and all replies have been entered of record by either the Examiner or by Appellants filing a Request for Continued Examination entering the reply (under 37 C.F.R. § 1.114). The replies that have been acknowledged and entered are as follows:

- the Advisory Action of June 16, 2004 indicates that the reply of May 28, 2004 would be entered for purposes of Appeal (Box 7 on the PTOL-303 form, whereby Appellants' representative orally confirmed with Examiner Rhee on July 29, 2004 that Box 7 is checked) (this Appeal follows);
- the final Office Action of March 2, 2004, is in response to Appellants' reply of November 26, 2003 (entered);
- the Office Action of August 28, 2003, is in response to Appellants' reply of August 1, 2003 (entered);
- the Request for Continued Examination filed by Appellants on August 1, 2003 enters a preliminary reply of August 1, 2003 as well entering the after final reply of July 10, 2003;
- the final Office Action of March 10, 2003, is in response to Appellants' reply of December 27, 2002 (entered);
- the Office Action of June 27, 2002, is in response to Appellants' reply of June 10, 2002 (entered);
- the Office Action of May 9, 2002, which is a Restriction Requirement, is the first Office Action that issued in the present application.

Claims 1-3 and 9-18 as entered for purposes of appeal are reflected in the Appendix (attached at the end of this Appeal Brief).

The canceled claims and the withdrawn claims are not shown in the Appendix, since they are not being appealed.

V. Summary of Invention

The present invention is directed to a polytetrafluoroethylene block-shaped molded article having certain physical properties of melt viscosity and amount of block deformation. The melt viscosity and block deformation amount are defined as being contained within a polygonal region as shown in diagram 1 below:

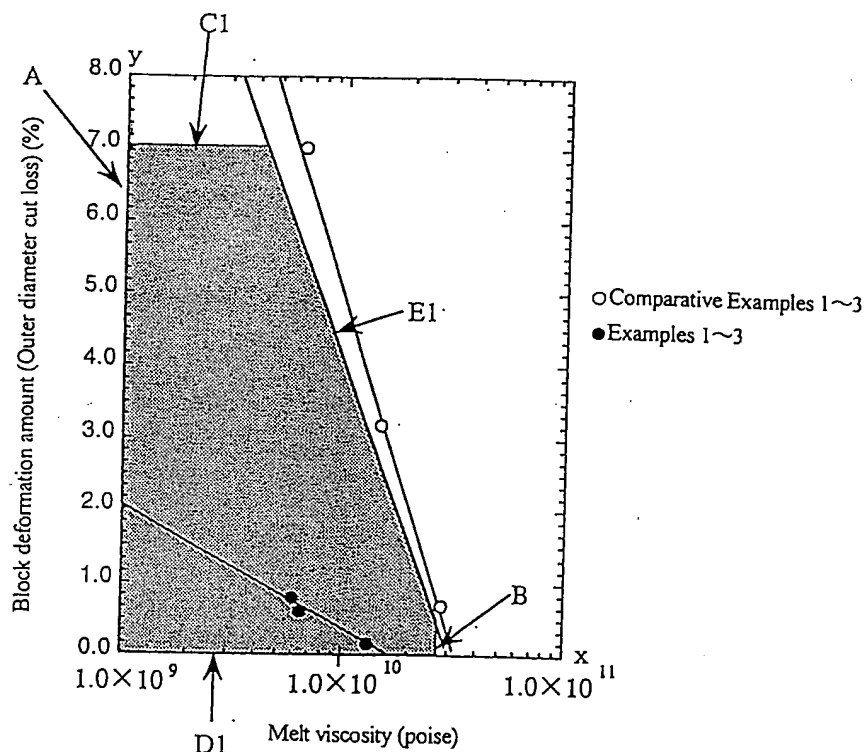


Diagram 1

In Diagram 1 above, the polygon region is surrounded by a straight line A: $x = 1.0 \times 10^9$ (melt viscosity of 1.0×10^9 poise), a straight line B: $x = 2.5 \times 10^{10}$ (melt viscosity of 2.5×10^{10} poise), a straight line C1: $y = 7.0$ (block deformation amount of 7.0%), a straight line D1: $y = 0$ (block deformation amount of 0%), a straight line E1: $y = -8.7 \log_{10}(x) + 91$ in a graph with an x-axis being a common logarithm of the melt viscosity (poise) at 380°C of polytetrafluoroethylene and a y-axis being the block deformation amount (%) which is a weight loss until a stable film or sheet is cut from the molded article. Diagram 1 above is also Figure 4 of Appellants' specification (see also page 3, lines 13-15 of the present specification).

Also, in the present invention, the polytetrafluoroethylene block-shaped molded article is obtained by compression-molding and baking a polytetrafluoroethylene powder obtained by suspension polymerization. Further, the claimed polytetrafluoroethylene block-shaped molded article is cylindrical and has a height of at least 800 mm (see appealed claim 1 in the Appendix at the end of this Appeal Brief that recites these features).

In another embodiment of the present invention, the present invention is directed to a polytetrafluoroethylene block-shaped molded article produced by a method comprising insertion, placement and heating steps (see appealed, independent claim 18 in the Appendix).

The first step in the present invention is inserting a polytetrafluoroethylene preform obtained by compression-molding a polytetrafluoroethylene powder, into a pipe in a state in which a symmetry axis of the preform is horizontal. The second step in the present invention is placing the pipe on two rolls spaced apart in a horizontal direction. The third step is heating the preform to bake the preform while rotating the pipe and the preform by rotating at least one roll to transmit a rotation of the roll to the pipe, wherein the polytetrafluoroethylene block-shaped molded article is produced (see also Appellants' Figure 2 and the paragraph bridging pages 5-6 of the present specification). In the present invention, the produced molded article is cylindrical, has a height of at least 800 mm, and has a melt viscosity and a block deformation amount contained within a polygonal region surrounded by a straight lines A-E1 (see the same Diagram 1 above for the claimed polygonal area).

VI. Issues Presented

Whether or not claim 1 is patentable under 35 U.S.C. § 103(a) over the modification of Ebnesajjad '639 (U.S. Patent No. 5,683,639).

Whether or not claim 2 is patentable under 35 U.S.C. § 103(a) over the modification of Ebnesajjad '639.

Whether or not claims 3, 13, 14, 15 and 16 are patentable under 35 U.S.C. § 103(a) over the modification of Ebnesajjad '639.

Whether or not claims 9 and 10 are patentable under 35 U.S.C. § 103(a) over the modification of Ebnesajjad '639.

Whether or not claims 11 and 12 are patentable under 35 U.S.C. § 103(a) over the modification of Ebnesajjad '639.

Whether or not claim 17 is patentable under 35 U.S.C. § 103(a) over the modification of Ebnesajjad '639.

Whether or not claim 18 is patentable under 35 U.S.C. § 103(a) over the modification of Ebnesajjad '639.

VII. Grouping of Claims

Appellants respectfully request that the claims be grouped as follows.

Group I - Claim 1

Group II - Claim 2

Group III - Claims 3 and 13-16

Group IV - Claims 9-10

Group V - Claims 11-12

Group VI - Claim 17

Group VII - Claim 18

For purposes of the instant Appeal, each Group of claims is separately patentable, such that the claims encompassed thereby do not stand or fall together. This is because each Group recites a further or different feature(s), which the asserted modification of

Ebnesajjad '639 under 35 U.S.C. § 103(a) does not disclose, teach or suggest. Each of Groups I-VII is discussed in further detail in Appellants' Arguments below as to why each Group of claims is considered separately patentable.

VIII. Argument

Appellants contend that each Group of claims, which includes claims 1-3 and 9-18, is patentable under 35 U.S.C. § 103(a) over the modification of Ebnesajjad '639. Overall, Appellants assert that the instant rejection should be reversed based on any one and all of the following:

- The cited reference fails to disclose all claimed features of each claim in each Group;
- One having ordinary skill in the art would not be motivated in modifying the cited reference in order to achieve or produce the present invention;
- One having ordinary skill in the art would not be reasonably expect to be successful in modifying the cited reference in order to achieve or produce the present invention; and
- Unexpected results exist for the present invention, whereby such unexpected results rebut any asserted *prima facie* case of obviousness.

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Appellants respectfully submit that when the USPTO issues a rejection of claims under 35 U.S.C. § 103(a), a patent applicant has the opportunity to rebut such any asserted *prima facie* case of obviousness by pointing out how one or more of the requirements for a *prima facie* case of obviousness has not been satisfied (i.e., the requisite motivation), or by a showing of unexpected results that rebuts any asserted *prima facie* case of obviousness. In this regard, Appellants respectfully submit that they have rebutted the asserted *prima facie* case of obviousness in both ways during the course of prosecution. Arguments for each Group is presented below.

Arguments for Group I: Claim 1

Claim 1 of the present application is patentable over the cited Ebnesajjad '639 reference, or the modification thereof, because the cited reference (even when modified) fails to disclose all features as instantly claimed. Further, the cited reference has been improperly modified since a person having ordinary skill in the art at the time of filing the present application, and upon reading the cited reference, would not reasonably expect to be successful or be motivated in modifying the cited reference in order to achieve or produce the present invention due to such a lack of disclosure and the many inconsistencies between the reference and the present invention. Further, the present invention has achieved unexpected

results of a more efficient and improved method and device, which rebuts any asserted *prima facie* case of obviousness.

With respect to any rejection under 35 U.S.C. § 103(a), U.S. case law squarely holds that a proper obviousness inquiry requires consideration of three factors:

- the prior art reference (or references when combined) must teach or suggest all the claim limitations;
- whether or not the prior art would have taught, motivated, or suggested to those of ordinary skill in the art that they should make the claimed invention (or practice the invention in case of a claimed method or process); and
- whether the prior art establishes that in making the claimed invention (or practicing the invention in case of a claimed method or process), there would have been a reasonable expectation of success.

See *In re Vaeck*, 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991); see also *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1316-17 (Fed. Cir. 2000); *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1599 (Fed. Cir. 1988).

Regarding the first requirement mentioned above, Appellants respectfully submit that a *prima facie* case of obviousness has not been

established and that the Ebnesajjad '639 reference has been improperly modified.

a) Failure to Disclose All Claimed Features and Improper Modification of Ebnesajjad '639

There is a lack of disclosure of all claimed features in the cited Ebnesajjad '639 reference, even when modified as proposed by the Examiner. For example, the cited Ebnesajjad '639 fails to disclose the claimed polygonal region defined by the present invention's melt viscosity and amount of block deformation. Ebnesajjad '639 also fails to disclose the claimed height of the molded article (such arguments were asserted by Appellants previously; see, e.g., the reply filed May 28, 2004, 2004, starting at page 15).

Claim 1 of the present invention reads as follows:

Claim 1. A polytetrafluoroethylene block-shaped molded article having a melt viscosity and a block deformation amount contained within a polygonal region surrounded by a straight line A: $x = 1.0 \times 10^9$ (melt viscosity of 1.0×10^9 poise), a straight line B: $x = 2.5 \times 10^{10}$ (melt viscosity of 2.5×10^{10} poise), a straight line C1: $y = 7.0$ (block deformation amount of 7.0%), a straight line D1: $y = 0$ (block deformation amount of 0%), a straight line E1: $y = -8.7\text{Log}_{10}(x) + 91$ in a graph with an x-axis being a common logarithm of the melt viscosity (poise) at 380°C of polytetrafluoroethylene and a y-axis being the block deformation amount (%) which is a weight loss until a stable film or sheet is cut from the molded article,

wherein the polytetrafluoroethylene block-shaped molded article is obtained by compression-molding and baking a polytetrafluoroethylene powder obtained by suspension polymerization, and

said polytetrafluoroethylene block-shaped molded article is cylindrical and has a height of at least 800 mm.

In the Office Action of March 2, 2004, the Examiner finally rejects the pending claims and refers Appellants to certain parts of Ebnesajjad '639. Specifically, the Examiner refers to column 2, line 44 in Ebnesajjad '639 for asserted disclosure of a cylindrical billet, column 5, line 14 for asserted disclosure of various sizes of cylindrical billets, and column 8, lines 34-35 for asserted disclosure of a billet having a height of 89 mm (see page 2 of the final Office Action). In the previous Office Action of August 28, 2003, the Examiner referred Appellants to column 1, line 53, column 3, lines 7-8 and column 1, lines 37-39 and 56-62 in Ebnesajjad '639 for disclosure of melt viscosity, temperature and the method used in the reference. However, despite the disclosure in Ebnesajjad '639, Appellants maintain their position that the first requirement of disclosure of all claimed features for a *prima facie* case of obviousness has not been satisfied, which can be summarized according to diagram 2 below. Diagram 2 was first submitted to the Examiner in Appellants' reply of July 10, 2003 and labeled as "Exhibit A" (see starting at page 5 of the reply discussing Exhibit A). Exhibit A (or Diagram 2 below) was also submitted with Appellants' reply of August 1, 2003.

With the present appeal, Appellants respectfully maintain their position that the properties of the instantly claimed molded article

are patentably distinct from those properties of the molded article of Ebnesajjad '639 as shown in Diagram 2 below (see Appellants' reply of November 26, 2003 for these same arguments of patentability; see also Exhibit A as attached to Appellants' reply of July 10, 2003 and the arguments therein) (the November 26, 2003 response at page 10 incorporates by reference Appellants' previous replies of July 10, 2003 and August 1, 2003).

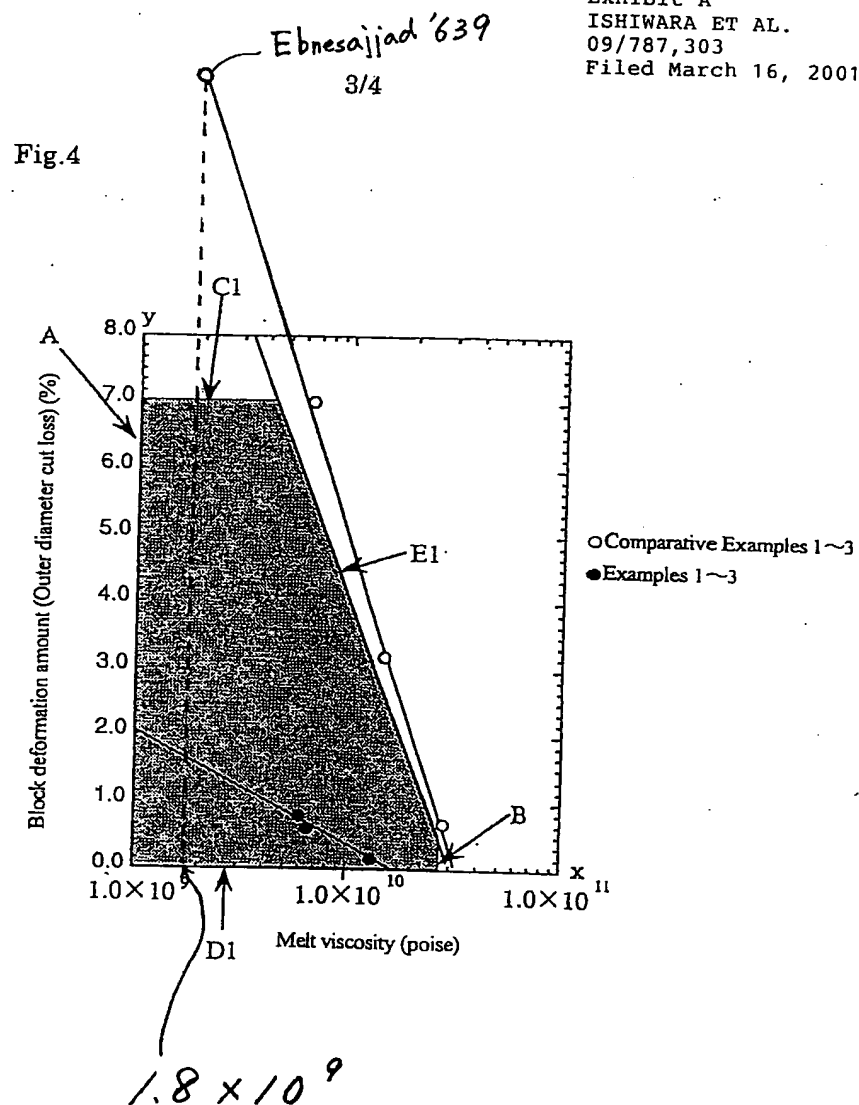


Diagram 2

As can be seen from Diagram 2, the Ebnesajjad '639 process leads to a molded product that necessarily falls outside the scope of the present invention.

Appellants position is further supported by U.S. case law. Appellants previously submitted that an analysis under 35 U.S.C. § 103(a) requires a determination of the scope and content of the prior art, *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966) (see Appellants' reply of May 28, 2004, starting at page 15). In determining the scope and content of the prior art as required by *Graham v. John Deere Co.*, an evaluation of the claimed subject matter as a whole in the light of the differences between the disputed pending claims of the present invention and the cited Ebnesajjad '639 reference reveals that Ebnesajjad '639 is limited in scope of its disclosure of the present invention. Specifically, there is no disclosure or recognition in Ebnesajjad '639 of the features of, e.g., the height and/or the melt viscosity and block deformation amount contained within a polygonal region as instantly claimed. Diagram 1 (page 5 of this Appeal Brief) above depicts the polygonal region of the present invention, and Diagram 2 shows how Ebnesajjad '639 fails to disclose all claimed features of the present invention.

As can be seen from claimed elements of claim 1 presented above (or in the Appendix at the end of this Brief), Appellants specifically recite many features in the instantly pending claims

that are not described in Ebnesajjad '639, including structural features:

- the polytetrafluoroethylene block-shaped molded article has a height of at least 800 mm
- the polytetrafluoroethylene block-shaped molded article has certain melt viscosity
- the polytetrafluoroethylene block-shaped molded article has certain block deformation amount
- the polytetrafluoroethylene block-shaped molded article is obtained by compression-molding and baking a polytetrafluoroethylene powder obtained by suspension polymerization
- melt viscosity and block deformation amount are contained within a polygonal region surrounded by
- a straight line A: $x = 1.0 \times 10^9$ (melt viscosity of 1.0×10^9 poise)
- a straight line B: $x = 2.5 \times 10^{10}$ (melt viscosity of 2.5×10^{10} poise)
- a straight line C1: $y = 7.0$ (block deformation amount of 7.0%)
- a straight line D1: $y = 0$ (block deformation amount of 0%)
- a straight line E1: $y = -8.7 \log_{10}(x) + 91$

(wherein the straight lines being in a graph with an x-axis as a common logarithm of the melt viscosity (poise) at 380°C of polytetrafluoroethylene and a y-axis as the block deformation amount (%) which is a weight loss until a stable film or sheet is cut from the molded article).

All of these features have not been accounted for in the previous Office Actions, including the final Office Action of March 2, 2004. One mentioned instance is that Ebnesajjad '639 does not disclose the claimed melt viscosity and block deformation amount of the polygonal region of Appellants' claim 1. One of the Examiner's responses to Appellants' assertion that the reference does not disclose the polygonal region is detailed in the final Office Action at paragraph 2, page 3, lines 1-14. This part of the final Office Action states that these recited features (at least with regard to pending claims 18-19) constitute a process limitation and is given little or no patentable weight. Appellants respectfully and heavily disagree with this assertion.

Appellants have referred the Examiner to "Exhibit A" (which is the same as Diagram 2 at page 14 of this Appeal Brief) as evidence that such claimed features are necessarily outside the scope of the cited Ebnesajjad '639 reference, and that one having ordinary skill in the art upon reading Ebnesajjad '639 reference would not achieve the properties and features of the instantly claimed molded article.

Diagram 2 above clearly shows that the Ebnesajjad '639 reference fails to disclose all claimed features of the present invention and should be viewed as evidence of patentability of the present invention. Appellants respectfully submit that the Examiner has erred in this regard.

In addition, the Examiner essentially states in almost every USPTO correspondence that if Ebnesajjad '639 and the present invention have the same melt viscosity, then the deformation amounts would also be the same, since Ebnesajjad '639 teaches the amount of deformation is to some degree a function of the melt viscosity of PTFE (see the final Office Action of 03/02/2004 at page 5, lines 9-13; the Office Action of August 28, 2003 at page 5, lines 7-0; etc.). Appellants also disagree with this assertion, and further submit that the amount of deformation as a function of the melt viscosity does not equate to disclosure of deformation of a PTFE tube as Appellants have previously argued (see Appellants' reply of November 26, 2003, at pages 11-14).

Previously, and as support of Appellants' position that the melt viscosity in Ebnesajjad '639 does not equal disclosure of the present invention, Appellants explained the relationship to the size of the article to deformation amounts and melt viscosities in the Declaration under 37 C.F.R. § 1.132 that was filed with Appellants' reply of November 26, 2003. In the Rule 132 Declaration, it is shown

that the one of ordinary skill in the art cannot achieve the present invention based upon the disclosure in Ebnesajjad '639 (even with the disclosed melt viscosity as asserted by the Examiner). Specifically, in the previously filed Rule 132 Declaration by co-inventor Masahiko Yamada, Appellants have explained that Figure A of the Rule 132 Declaration depicts the relationship between the a) deformation amount (%) and b) block length and c) melt viscosity. Figure A of the Rule 132 Declaration is reproduced below as Diagram 3 for the Board's convenience:

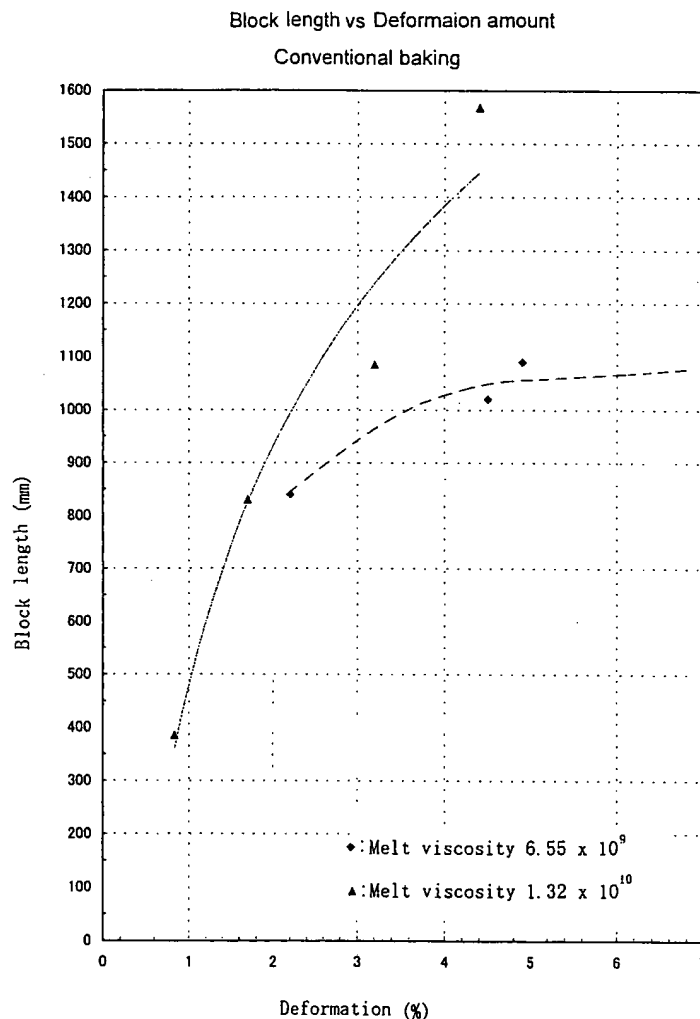


Diagram 3

As seen in Diagram 3, when varying the melt viscosity between 6.55×10^9 versus 1.32×10^{10} poise but keeping the block length relatively the same (between 1000 and 1100 mm), there is a difference in the amount of deformation (%) as can be seen (about 3% for the 1.32×10^{10} poise; three values shown that fall within the range of about 4% to about 7% for 6.55×10^9 poise). Also, what Diagram 3 depicts is that the amount of deformation (%) increases when the block length increases for both melt viscosity values, wherein there is more pronounced deformation when the melt viscosity is the 6.55×10^9 poise (no articles over a block length of about 1100 mm appear in Diagram 3). These differences and the relationship between a) deformation amount (%) and b) block length and c) melt viscosity were also explained by Appellants in their reply dated November 26, 2003 (see starting page 10) (Figure A was also discussed during the May 27th Interview mentioned above).

Also, Appellants previously explained how Exhibit A, or Diagram 2, details how the Ebnesajjad '639 process leads to a molded product that necessarily falls outside the scope of the present invention (see, e.g., Appellants' reply of August 1, 2003). In the August 1, 2003 reply, Appellants explained to the Examiner that an attempt to follow the procedures of Ebnesajjad '639 in order to obtain a cylindrically-shaped product having a length as instantly claimed necessarily results in a defective product which necessarily has

melt-viscosity and block deformation properties outside the parameters as defined in the present claims (see starting at page 12 of the reply). Appellants further explained in the August 1, 2003 reply that such deformations are similar or the same as the Comparative Examples of the present specification. Such deformity has been a problem in the state of the art. Appellants also referred the Examiner to Exhibit A (Diagram 2 on page 14 of this Appeal Brief) that depicts how a large billet of Ebnesajjad '639 would exhibit a larger deformation amount than the deformation amount (that is, 7%) than that as defined in the pending claim 1.

Though the Examiner has maintained there exists similar melt viscosities between the present invention and the cited reference (wherein the billet of Ebnesajjad '639 has a melt viscosity of 1.8×10^9 poise), Appellants have argued and supplied the Examiner with Exhibit A and the Rule 132 Declaration showing how the Ebnesajjad '639 billet results in a block deformation amount that is outside of the deformation as defined in the present claim 1 (based on extrapolation from Comparative Examples 1-3 that also employed static sintering techniques).

Appellants also explained the contents of the Rule 132 Declaration as distinguishing over the cited Ebnesajjad '639 reference. In Appellants' reply of November 26, 2003 (at pages 11-12), Appellants explained that Figure A of the Declaration shows the

relationship of block size to deformation amount; Figure B compares the Ebnesajjad '639 product with that of the present invention. Also, Experiments A-1, A-2 and A-3 of the Rule 132 Declaration (at pages 2-3) are comparative examples, and Experiment B-1 corresponds to the present invention. Experiment A-1 has a preform size of 100 cm, wherein the preform is similar to Figure 1 of the present application. Experiment A-2 changes the preform size of A-1, and Experiment A-3 changes the melt viscosity of A-1. Experiment A-3 has a melt viscosity of 1.32×10^{10} poise (compare to the 1.0×10^9 poise at Col. 1, lines 53-54 of Ebnesajjad '639). Experiment B-1 has a melt viscosity of 6.55×10^9 poise, and a length of about 108 cm (see line 6 from the bottom of page 4 of the Rule 132 Declaration).

Appellants even submitted a photograph as a part of the Rule 132 Declaration (as Figure B) (that was submitted with Appellants' reply of November 26, 2003) that displayed the appearances of claimed molded article versus the molded article of Ebnesajjad '639 (see starting at page 10 of the November 26, 2003 reply which discusses the contents of the Declaration). The molded article as shown in the Rule 132 Declaration that pertains to Ebnesajjad '639 corresponds to the Examiner's modification of enlarging the size of the disclosed billet. Diagram 4 below reproduces this photograph of the Declaration:

Photographs of the block-shaped molded articles

Experiment A-1
(Conventional)

Experiment B-1
(Present invention)

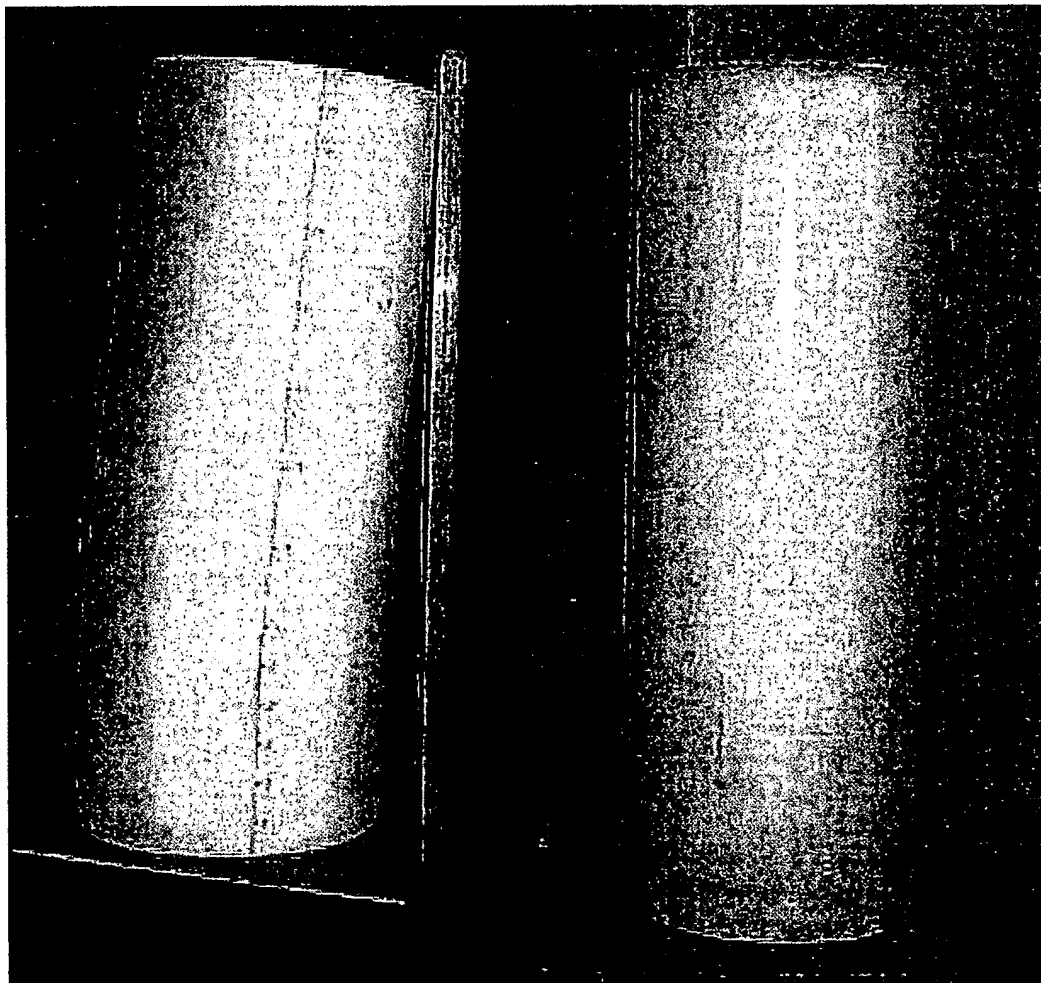


Diagram 4

The molded article on the left in Diagram 4 represents the molded article of Ebnesajjad '639 when enlarged to Appellants' claimed height of at least 800 mm.

Appellants further maintain their position that one of ordinary skill in this art understands the problem that a bigger article deforms during sintering due to the weight of the article itself (see Appellants' reply of August 2, 2003 starting at page 9). For instance, as shown in Comparative Examples 1-3 of the present specification, when the height of the article is large, the load at unit area of base or bottom of the article is high (for instance, see page 14, lines 15-17 of the specification) so that the article deforms during the sinter process. This is also shown in Appellants' Figure 5 of the present specification (Fig. 5 is explained at page 11, lines 9-19 of the specification; the present invention is represented by the "●" points in Figure 5, and the Comparative Examples are shown as "o" points). In contrast to the Comparative Examples, the present invention has achieved a large PTFE molded article block having less distortion and small strain is produced (see the Examples in specification). Appellants respectfully submit that the Examiner has not sufficiently countered Appellants position regarding the state of the art and the problems associated with it.

In fact, Appellants have previously asserted that the claimed feature of a height of at least 800 mm is a patentably distinct

feature. However, the Examiner has maintained that size is not a patentable feature and cited the *In re Rose* case (105 USPQ 237) (see the final Office Action in paragraph 2, at page 2, last paragraph on the page). Appellants submit this is an inappropriate assessment, and that the cited Ebnesajjad '639 reference even fails to disclose or suggest how to make a PTFE cylinder having a length of at least 800 mm as instantly claimed. As explained below, the cited *Rose* case is inapplicable because size involves more than a routine skill in the pertinent art.

The generalization that size is not a patentably distinct feature cannot apply to all fields of technology, e.g., nanotechnology or the field that includes the present invention. Appellants have pointed out how the cited *In re Rose* decision is inapplicable to the instant situation since this decision is fact-specific whereby one of ordinary skill in the art deals with the art of lumber (see Appellants' reply of August 1, 2003, starting at page 8). Appellants herein maintain their position that *Rose* does not apply here, and that the present invention is patentably distinct for the above reasons. Further, the CCPA in *Rose* referred to *In re Yount* when discussing size as ordinarily not being a matter of invention (105 USPQ at 240), wherein the *Yount* court referred to *In re Kirke* when stating that "mere size is not ordinarily a matter of invention". 80 USPQ 141, 143 (citing *In re Kirke*, 5 USPQ 539).

However, in referring to size as not a matter of invention, the Yount court also referred to how the "appellant by his own specification teaches that small bags are the equivalent of large bags, he is not in a favorable position to argue for any invention in one as distinguished from the other." 80 USPQ at 143 (citing *In re Ayres*, 29 USPQ 424 and *In re Withington*, 41 USPQ 742).

Appellants respectfully maintain that based on these facts and application of principles, the *In re Rose* decision is being incorrectly applied to the appealed claim(s), and one of ordinary skill in the PTFE molded article art would not consider size as a routine skill. There is no *prima facie* case or *per se* rule here that a change in size is generally recognized as being with the level of ordinary skill for this art of molded articles. Even assuming for the sake of argument that *Rose* is applicable, Appellants submit that the Examiner has not accounted for the problems associated in the art.

Such problems are the deformities that occur when making larger sized billets. This is because when the height of the article is large, the load at unit area of base or bottom of the article is high (for instance, see the present specification's Comparative Examples and page 14, lines 15-17 explaining the deformity problems) so that the article deforms during the sinter process. This phenomenon regarding the deformation amount related to the load per unit area at the bottom of the article was also explained in Appellants' reply of

July 10, 2003 (see pages 5-7; i.e., the billet in Ebnesajjad '639 deforms because the billet remains in a static position without any method for retaining the shape of the billet during the heating to the temperature of at least melting point).

Ebnesajjad '639 does not even achieve a molded article having a size as instantly claimed due to such problems associated in this art. Therefore, Appellants respectfully submit that not all instantly claimed features of the present invention can be accounted for by application of the *In re Rose* case. Reversal of this rejection under § 103(a) by the Board is requested based on this reason alone.

Appellants have also requested that if the Examiner continues to maintain that size involves a routine skill in the art corresponding to the present invention, that the Examiner produce (technical or scientific) evidence to support this assertion beyond the *Rose* decision for the present technology (see Appellants' reply of May 28, 2004, page 21). Appellants also requested that if the Examiner is relying upon personal knowledge to support the finding of what is known in this art, that the Examiner provide an affidavit or declaration setting forth specific factual statements and explanations to support such an assertion. Such evidence or affidavit has not been provided to Appellants.

Appellants further submit that Ebnesajjad '639 fails to disclose any examples that inherently include the features of the present

invention or that could be made to include the features of the present invention, because Ebnesajjad '639 fails to address any issues regarding deformation features. Consequently, Ebnesajjad '639 fails to provide a basis for the alleged *prima facie* obviousness, because all the elements of appealed claim 1 fail to be disclosed or suggested by Ebnesajjad '639. Further, Ebnesajjad '639 fails to suggest any technique for achieving the advantageous reduction in deformation achieved by the present invention that further undermines the allegation of obviousness. Appellants add that there is a presumption of patentability given to the patent applicant, and that no reference has been discovered that discloses all features as instantly claimed (*i.e.*, see the features of pending claim 1). The closest reference found by the Examiner is still deficient in many respects in disclosing the features of instantly pending and appealed claim 1 (*i.e.*, polygonal area; height; etc.).

Thus, under U.S. case law including *In re Vaeck*, a *prima facie* case of obviousness has not been established since there is no disclosure of all features of the claimed invention in Ebnesajjad '639, which is one of the requirements for a *prima facie* case of obviousness. 947 F.2d at 493, 20 USPQ2d at 1442. Appellants further submit that the disclosure in Ebnesajjad '639 still does not equal disclosure of all claimed features in appealed claim 1, such as the recited height and polygonal area (as evidenced by Diagram 2 on page 14 of this Appeal

Brief). Thus, Ebnesajjad '639 is deficient in several respects. In addition, Appellants maintain their position that the claimed height is a patentably distinct feature over the cited Ebnesajjad '639 reference (as evidenced by Diagram 4 on page 23 of this Appeal Brief). Accordingly, Appellants respectfully request the Board to reverse the rejection under 35 U.S.C. § 103(a).

b) Lack of Requisite Reasonable Expectation of Success

Appellants further submit that the requisite reasonable expectation of success for a *prima facie* case of obviousness has not been satisfied, and that the instant rejection should be reversed for this reason alone. See *In re Vaeck*. Appellants have asserted (see, e.g., reply of May 28, 2004, pages 22-23) and herein maintain that one having ordinary skill in the art would not reasonably expect to be successful, upon a reading of Ebnesajjad '639 of achieving the present invention since Ebnesajjad '639 merely discloses a process that only achieves a tube having a height of 64 mm (see Example 2 at column 7 in the cited reference) or 8.9 cm (Control F at column 8). Though the Examiner asserts "size" (in any technological field) involves a routine skill, no technical evidence has been provided to support this assertion and Appellants submit that the skilled artisan would encounter significant problems, such as large amounts of deformity in the molded article, in attempting to achieve the present

invention. Appellants have even provided evidence during the course of prosecution that such deformities occur when one having ordinary skill in the art attempts what is disclosed in Ebnesajjad '639 in making the instantly claimed, larger product (see Diagram 4 on page 23 of this Appeal Brief) above or Figure B in the previously filed Rule 132 Declaration).

Appellants further submit that a cited reference must be considered for all that it teaches. *W.L. Gore & Assoc. v. Garlock Inc.*, 721 F.2d 1540, 1550, 220 USPQ 3031, 311 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). A fair reading of the entire Ebnesajjad '639 article, with its focus on much smaller sized billets using its molding process with no disclosure of how to make a molded article of at least 800 mm, indicates to one of ordinary skill in the art that there is not a reasonable expectation that a cylindrical billet could successfully be produced as instantly claimed. Thus, Appellants respectfully submit that a reasonable reading of the Ebnesajjad '639 reference by one of ordinary skill in the art would be that such an individual would not be informed one way or the other regarding the success of making a polytetrafluoroethylene block-shaped molded article as Appellants claim.

Appellants also pointed to the fact that the USPTO has not found a reference that discloses Appellants' instantly claimed product having less deformity and that is larger in height (i.e., as defined

in pending claim 1). This is due to the problems associated with this art. Thus, Appellants respectfully submit that the skilled artisan would not reasonably expect to be successful in achieving the present invention upon a reading of the cited Ebnesajjad '639 reference.

Accordingly, Appellants respectfully submit that not all requirements for a *prima facie* case of obviousness have been satisfied. Reversal of the final rejection of claim 1 by the Board is respectfully requested.

c) Lack of Requisite Motivation

Appellants further submit that the requisite motivation for a *prima facie* case of obviousness has not been satisfied. Ebnesajjad '639 has been modified to disclose all claimed features of the present invention, including the claimed height of the molded article. The recited features of the melt viscosity and deformation amount as defined by the polygon region has not been given the appropriate patentable weight, which Appellants submit is improper for the reasons mentioned above. Previously filed Exhibit A (Diagram 2 on page 14 of this Appeal Brief) is evidence that the properties of the Ebnesajjad '639 billet falls outside the scope of what is instantly claimed. There is also no clear and particular guidance for one of ordinary skill in the art, upon reading Ebnesajjad '639, to modify this reference's method and disclosure as proposed by the

Examiner so as to make the instant invention. See *In re Dembiczak*, 175 F.3d 994, 998, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). There is no flow from the prior art reference to account for the requisite motivation, nor would one of ordinary skill in the art know how to achieve the present invention based on the disclosure of Ebnesajjad '639. Sufficient evidence has not been provided by the Examiner to account for the deficiencies of Ebnesajjad '639 and for the modification thereof.

Overall, Appellants respectfully submit that the Examiner has improperly modified Ebnesajjad '639 by using the reference's disclosed melt viscosity to account for the claimed melt viscosity and block deformation amount (as defined by the polygonal area). The Examiner has also inappropriately applied the *In re Rose* case to account for the claimed height feature. Even assuming, *arguendo*, *Rose* could be applied, there is still no teaching or disclosure in Ebnesajjad '639 to achieve the features as instantly claimed. All examples in Ebnesajjad '639 (see columns 5-10) focus on much smaller billets without any guidance to achieve bigger sized billets and how to overcome the problems associated in the art. Thus, Appellants respectfully submit that one of ordinary skill in the art would not be motivated in referring to and modifying the Ebnesajjad '639 reference in order to achieve or produce the present invention.

Accordingly, Appellants respectfully submit that the required motivation for a *prima facie* case of obviousness has not been satisfied. Appellants respectfully request the Board to reverse the Examiner's rejection of claim 1 for failure to establish a *prima facie* case of obviousness.

d) Unexpected Results that Rebut the Asserted *Prima Facie* Case of Obviousness

Consideration of the unexpected results for the present invention and reversal of this rejection is respectfully requested of the Board.

With regard to unexpected results for the present invention, Appellants have already shown such results. For instance, in Appellants' reply of August 1, 2003 (see starting at page 11), the present invention has achieved the unexpected advantage of avoiding deformation problems that occur when producing PTFE articles of this large size. As shown in Comparative Examples 1-3 of Appellants' present specification, when the height of the article is large, the load at unit area of base or bottom of the article is high (for instance, see page 14, lines 15-17 of the specification) so that the article deforms during the sinter. The resulting deformation is due to the weight of the article itself. In contrast, the present invention has achieved a large PTFE molded article block having less

distortion and smaller strain is produced (see Examples in specification).

Also in contrast to the present invention, an attempt to follow the procedures of Ebnesajjad '639 in order to obtain a cylindrically-shaped product having a length as instantly claimed necessarily results in a defective product which necessarily has melt-viscosity and block deformation properties outside the parameters as defined in the appealed claim 1. Such deformations are similar or the same as the Comparative Examples of the present specification.

In support of Appellant's position, Appellants even referred the Examiner to Exhibit A (Diagram 2 on page 14 of this Appeal Brief), which shows that a larger billet of Ebnesajjad '639 (though not disclosed in the reference) would exhibit a larger deformation amount than the deformation amount (that is, 7%) defined in the appealed claim 1. As can be seen from Diagram 2, if the billet of Ebnesajjad '639 has the same large size as in Example 1 of the present specification (height: 1000 mm, diameter: 420 mm), such a large billet would deform using "Procedure D," just as Comparative Examples 1 to 3 of the present specification deformed. The proposed Ebnesajjad '639 billet has a relatively high amount of block deformation that is outside of the deformation as defined in the present claim 1. Thus, Ebnesajjad '639 cannot achieve the unexpected results of the present invention.

Further, Appellants have properly compared to the closest prior art example, which the Examiner considers to be that of Ebnesajjad '639. Appellants also submitted the Rule 132 Declaration as evidence of unexpected results of the present invention (see Diagram 4 on page 23 of this Appeal Brief).

Thus, Appellants respectfully submits that the present invention has achieved unexpected results that rebut the asserted *prima facie* case of obviousness (as evidenced by the experimental results in Appellants' present specification and the Rule 132 Declaration; see Diagram 4 on page 23 of this Appeal Brief). Reversal of the rejection under 35 U.S.C. §103(a) is respectfully requested.

e) Summary of Appellants' Position

Overall, Appellants respectfully maintain their position that the present invention is patentably distinct from the cited Ebnesajjad '639 reference because (i) a *prima facie* case of obviousness has not been established, and (ii) unexpected results for the present invention which rebut any asserted *prima facie* case of obviousness.

With regard to (i) above, Appellants maintain that Ebnesajjad '639 fails to disclose all features as instantly claimed, including the recited height and polygonal area. Appellants further submit that size does not involve a routine skill for the art corresponding to

the present invention. Also, the requisite motivation and/or reasonable expectation of success are lacking, as evidenced by Diagram 2 above and the previously submitted Rule 132 Declaration. For instance, one having ordinary skill in the art would not reasonably expect to be successful in achieving the present invention since, as shown in Diagram 4, and a molded article having significant deformity would be achieved and not the present invention (shown to the right in Diagram 4). As another example, Appellants maintain that the skilled artisan would not be motivated in modifying Ebnesajjad '639 so as to achieve the present invention since the proposed larger billet of Ebnesajjad '639 would exhibit larger deformation amounts than the deformation amount (that is, 7%) defined in presently pending claim 1.

With regard to (ii) above, Appellants have referred the Examiner in previous replies to the comparative examples in the present specification and submitted the mentioned Rule 132 Declaration as evidence of unexpected results for the present invention. Appellants have also compared the present invention to the closest prior art example of Ebnesajjad '639 in the same Rule 132 Declaration. Thus, Appellants submit that any asserted *prima facie* case of obviousness has been rebutted with these showings of unexpected results for the present invention. Accordingly, Appellants respectfully request the

Board to reverse the Examiner's final rejection of claim 1 as improper and/or as rebutted by the unexpected results.

Arguments for Group II: Claim 2

Appellants respectfully assert that the cited Ebnesajjad '639 (or modification thereof) does not render claim 2 as obvious as follows. Claim 2 recites the following elements of the present invention:

Claim 2. The molded article according to claim 1, **wherein the melt viscosity at 380°C of the molded article is at most 2×10^{10} poise.**

The features in claim 2 also at issue are seen from the claim language: "the melt viscosity at 380°C of the molded article is at most 2×10^{10} poise".

All of the arguments presented above for Group I apply to Group II as well since claim 2 includes the embodiment of claim 1, but with more patentably distinct features. Even assuming, *arguendo*, that all arguments in Group I are unpersuasive, Appellants assert that the Ebnesajjad '639 reference still lacks disclosure of the features of claim 1 combined with the claimed melt viscosity as recited in claim 2. Thus, Appellants respectfully submit that Group II is patentably distinct from the cited Ebnesajjad '639 reference. Accordingly, reversal of the rejection of the Group II claim is respectfully requested.

Arguments for Group III: Claims 3 and 13-16

Appellants respectfully assert that the cited Ebnesajjad '639 (or modification thereof) does not render claims 3, 13, 14, 15 and/or 16 as obvious as follows. Claim 3 recites the following elements of the present invention:

Claim 3. The molded article according to claim 1,
wherein the block deformation amount is more than 0.7%.

The features in claim 3 also at issue are seen from the claim language: "wherein the block deformation amount is more than 0.7%." Claim 13 recites that "the polytetrafluoroethylene block-shaped molded article has a deformation degree of not more than 15%". Claim 14 recites that "polytetrafluoroethylene block-shaped molded article has a deformation degree of not more than 1.0%". Claim 15 recites that "wherein the polytetrafluoroethylene block-shaped molded article has a bend of not more than 2.0%". And claim 16 recites that "the polytetrafluoroethylene block-shaped molded article has a bend of not more than 0.1%". Appellants note that these features are discussed in the present specification at page 10 and in Figure 3.

All of the arguments presented above for Group I apply to Group III as well since each of claims 3, 13, 14, 15 and 16 includes the embodiment of claim 1, but with more patentably distinct features (i.e., range of deformation). Even assuming, *arguendo*, that all arguments in Group I are unpersuasive, Appellants assert that the

Ebnesajjad '639 reference still lacks disclosure of the features of each of claims 3 and 13-16. For instance, there is no disclosure or suggestion in Ebnesajjad '639 of the bend amount in claim 15 for the size of the molded article as claimed. Also, the Office Action of August 28, 2003 (at page 3, lines 7-8) admits the feature for the amount of bend is missing in the cited Ebnesajjad '639 reference. Appellants also respectfully maintain that the *In re Rose* case does not account for this deficient disclosure in Ebnesajjad '639. Thus, Appellants respectfully submit that Group III is patentably distinct from the cited Ebnesajjad '639 reference. Accordingly, reversal of the rejection of the Group III claims is respectfully requested.

Arguments for Group IV: Claims 9 and 10

Appellants respectfully assert that the cited Ebnesajjad '639 (or modification thereof) does not render claims 9 and/or 10 as obvious as follows. Claim 9 recites the following elements of the present invention:

Claim 9. The polytetrafluoroethylene block-shaped molded article of claim 1, **wherein the polytetrafluoroethylene powder in said polytetrafluoroethylene block-shaped molded article is a copolymer of tetrafluoroethylene and another fluoromonomer.**

The features in claim 9 at issue are seen from the claim language: "wherein the polytetrafluoroethylene powder in said polytetrafluoroethylene block-shaped molded article is a copolymer of

tetrafluoroethylene and another fluoromonomer". Claim 10 recites that the polytetrafluoroethylene powder is a "copolymer of tetrafluoroethylene and another perfluorovinylether of the formula (I)".

All of the arguments presented above for Group I apply to Group IV as well since each of claims 9-10 includes the embodiment of claim 1, but with more patentably distinct features.

Even assuming, *arguendo*, that all arguments in Group I are unpersuasive, Appellants assert that the Ebnesajjad '639 reference still lacks disclosure of the features of each of claims 9 and 10. For instance, there is no disclosure or suggestion in Ebnesajjad '639 of the copolymer as recited in claim 9 for the molded article having a height of at least 800 mm with certain melt viscosity and amount of deformation.

Thus, Appellants respectfully submit that Group IV is patentably distinct from the cited Ebnesajjad '639 reference. Accordingly, reversal of the rejection of the Group IV claims is respectfully requested.

Arguments for Group V: Claims 11 and 12

Appellants respectfully assert that the cited Ebnesajjad '639 (or modification thereof) does not render claims 11 and/or 12 as

obvious as follows. Each of claims 11 and 12 recites the following elements of the present invention:

Claim 11. The polytetrafluoroethylene block-shaped molded article of claim 1, wherein the polytetrafluoroethylene block-shaped molded article has a roundness degree of not more than 5.0%.

Claim 12. The polytetrafluoroethylene block-shaped molded article of claim 1, wherein the polytetrafluoroethylene block-shaped molded article has a roundness degree of not more than 0.3%.

The features in claim 11 at issue are seen from the claim language: "wherein the polytetrafluoroethylene block-shaped molded article has a roundness degree of not more than 5.0%". The features in claim 12 at issue are seen from the claim language: "wherein the polytetrafluoroethylene block-shaped molded article has a roundness degree of not more than 0.3%".

All of the arguments presented above for Group I apply to Group V as well since each of claims 11 and 12 includes the embodiment of claim 1, but with more patentably distinct features. Even assuming, *arguendo*, that all arguments in Group I are unpersuasive, Appellants assert that the Ebnesajjad '639 reference still lacks disclosure of the features of each of claims 11 and 12. The Office Action of August 28, 2003 (at page 3, lines 6-7) admits this roundness degree feature is missing in the cited Ebnesajjad '639 reference. Further, Appellants respectfully maintain that the *In re Rose* case does not

account for this deficient disclosure in Ebnesajjad '639. Thus, Ebnesajjad '639 is even more deficient in disclosing the features of claims 11 and 12. Accordingly, Appellants respectfully submit that the Group V claims are patentably distinct from the cited Ebnesajjad '639 reference. Reversal of the rejection of the Group V claims is respectfully requested.

Arguments for Group VI: Claim 17

Appellants respectfully assert that the cited Ebnesajjad '639 (or modification thereof) does not render claim 17 as obvious as follows. Claim 17 recites the following elements of the present invention:

Claim 17. The polytetrafluoroethylene block-shaped molded article of claim 1, **wherein the height of said polytetrafluoroethylene block-shaped molded article is 20 cm to 150 cm.**

The features in claim 17 at issue are seen from the claim language: "wherein the height of said polytetrafluoroethylene block-shaped molded article is 20 cm to 150 cm".

All of the arguments presented above for Group I apply to Group VI as well since claim 17 includes the embodiment of claim 1, but with more patentably distinct features. Even assuming, *arguendo*, that all arguments in Group I are unpersuasive, Appellants assert that the Ebnesajjad '639 reference still lacks disclosure of the features of

claim 17. At most, Ebnesajjad '639 discloses a billet of 8.9 cm or 89 mm (at column 8, line 33), which is far removed from the features of claim 17. Thus, Ebnesajjad '639 is even more deficient in disclosing the features of claim 17. Appellants respectfully submit that Group VI is patentably distinct from the cited Ebnesajjad '639 reference. Accordingly, reversal of the rejection of the Group VI claim is requested from the Board.

Arguments for Group VII: Claim 18

Appellants respectfully assert that the cited Ebnesajjad '639 (or modification thereof) does not render claim 18 as obvious as follows. Claim 18 recites the following elements of the present invention:

Claim 18. A polytetrafluoroethylene block-shaped molded article, said molded article is produced by a method comprising:

inserting a polytetrafluoroethylene preform obtained by compression-molding a polytetrafluoroethylene powder, into a pipe in a state in which a symmetry axis of the preform is horizontal; placing the pipe on two rolls spaced apart in a horizontal direction; and heating the preform to bake the preform while rotating the pipe and the preform by rotating at least one roll to transmit a rotation of the roll to the pipe, wherein the polytetrafluoroethylene block-shaped molded article is produced, said molded article is cylindrical, has a height of at least 800 mm, and has a melt viscosity and a block deformation amount contained within a polygonal region surrounded by a straight line A: $x = 1.0 \times 10^9$ (melt viscosity of 1.0×10^9 poise), a straight line B: $x = 2.5 \times 10^{10}$ (melt viscosity of 2.5×10^{10} poise), a straight line C1: $y = 7.0$ (block deformation amount of 7.0%), a straight line D1: $y = 0$

(block deformation amount of 0%), and a straight line E1: $y = -8.7\log_{10}(x) + 91$ in a graph with an x-axis being a common logarithm of the melt viscosity (poise) at 380°C of polytetrafluoroethylene and a y-axis being the block deformation amount (%) which is a weight loss until a stable film or sheet can be cut from the molded article.

The features in claim 18 at issue are seen from the recited steps, the claimed polygonal area pertaining to melt viscosity and block deformation amount, and the height.

All of the arguments presented above for Group I apply to Group VII as well since claim 18 includes the features of claim 1 (i.e., polygonal area; cylindrical; height) but with more patentably distinct features. Even assuming, *arguendo*, that all arguments in Group I are unpersuasive, Appellants assert that the Ebnesajjad '639 reference still lacks disclosure of the method steps as recited in claim 18.

In addition, it is noted that Ebnesajjad '639 mentions nothing regarding problems associated with deformation characteristics of billets formed according to the process described therein. Consequently, Ebnesajjad '639 fails to provide any adequate basis for a motivation to one skilled in the art to achieve the method as claim and to form the PTFE cylinder of the present invention. There is also no reasonable expectation of success when one of ordinary skill in the art, based on the disclosure in Ebnesajjad '639, would not know how to overcome the problems of deformation in the billet when making the

larger sized molded articles (the size leads to increased pressure at the base; etc.; see Diagram 4 on page 23 of this Appeal Brief).

Further, besides the lack of disclosure of the molded article's height as recited in claim 18, when a PTFE block-shaped molded article is made by the method described in Ebnesajjad '639, a PTFE block-shaped molded article having a height of at least 800 mm cannot have the block deformation amount as instantly claimed. There is much more deformity. This is because the Ebnesajjad '639 reference discloses that the article is sintered under the state of placing the article into a furnace (see column 2, lines 29-31; claim 1 at column 10) (the described process is also known as "sinter-at-stand"). Thus, when the height of the article is large, this process of Ebnesajjad '639 leads to large losses of material due to the deformities in the molded article (until a stable film or sheet can be cut from the block-shaped molded article) (this was asserted by Appellants in the reply of December 27, 2002, at pages 11-12).

Also, Appellants' specification at page 1, starting at line 20, even describes this conventional means of making a molded article (see step (b) at page 1, lines 23-25, which involves placing the preform into a furnace). Also, the sinter-at-stand of Ebnesajjad '639 is the same as shown in Comparative Examples 1-3 as described in Appellants' present specification. In this regard, as shown in Comparative Examples 1-3 of the present specification, when the

height of the article is large, the load at unit area of base or bottom of the article is high (for instance, see page 14, lines 15-17 of the specification) so that the article deforms during the sinter. The resulting deformation is due to the weight of the article itself. In other words, the block deformation amount in the case of the sinter-at-stand is dependent on the article's height and the melt viscosity of the polymer. Thus, the sinter-at-stand of Ebnesajjad '639 has drawbacks and the Ebnesajjad '639 method is patentably distinct from the method of claim 18 of the present invention. The Ebnesajjad '639 cannot achieve a molded article with the claimed height, melt viscosity and block deformation amount.

Therefore, significant patentably distinctions exist between the present invention, as recited in claim 18, and Ebnesajjad '639. Appellant respectfully submits that Group VI is patentably distinct from the cited Ebnesajjad '639 reference. Accordingly, reversal of the rejection of the Group VI claim is respectfully requested.

IX. Conclusion

For the reasons advanced above, it is respectfully submitted that claims 1-3 and 9-18 of the present application are allowable, wherein the present invention is patentably distinct from the cited modification of Ebnesajjad '639, and that this reference has been improperly modified. Appellants respectfully submit that when the

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USPTO issues a rejection of claims under 35 U.S.C. § 103(a), a patent applicant has the opportunity to rebut such any asserted *prima facie* case of obviousness by pointing out how one or more of the requirements for a *prima facie* case of obviousness has not been satisfied (i.e., the requisite motivation), or by a showing of unexpected results that rebuts any asserted *prima facie* case of obviousness. In this regard, Appellants during the course of prosecution have rebutted the asserted *prima facie* case of obviousness in both ways. More specifically, the cited Ebnesajjad '639 reference fails to disclose all claimed features of the instantly appealed claims, and does not provide the requisite reasonable expectation and motivation so that one of ordinary skill in the art could achieve the present invention. Further, unexpected results exist for the present invention, which rebuts any asserted *prima facie* case of obviousness.

Accordingly, favorable consideration and reversal by the Honorable Board of Patent Appeals and Interferences of the Examiner's rejection under 35 U.S.C. § 103(a) of claims 1-3 and 9-18 is respectfully solicited. The Final Rejection of the Examiner is without basis, and should be reversed.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees

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required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of
time fees.

Respectfully submitted,

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X. APPENDIX: CLAIMS ON APPEAL

Claim 1. A polytetrafluoroethylene block-shaped molded article having a melt viscosity and a block deformation amount contained within a polygonal region surrounded by a straight line A: $x = 1.0 \times 10^9$ (melt viscosity of 1.0×10^9 poise), a straight line B: $x = 2.5 \times 10^{10}$ (melt viscosity of 2.5×10^{10} poise), a straight line C1: $y = 7.0$ (block deformation amount of 7.0%), a straight line D1: $y = 0$ (block deformation amount of 0%), a straight line E1: $y = -8.7 \log_{10}(x) + 91$ in a graph with an x-axis being a common logarithm of the melt viscosity (poise) at 380°C of polytetrafluoroethylene and a y-axis being the block deformation amount (%) which is a weight loss until a stable film or sheet is cut from the molded article,

wherein the polytetrafluoroethylene block-shaped molded article is obtained by compression-molding and baking a polytetrafluoroethylene powder obtained by suspension polymerization, and

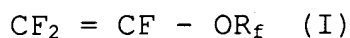
said polytetrafluoroethylene block-shaped molded article is cylindrical and has a height of at least 800 mm.

Claim 2. The molded article according to claim 1, wherein the melt viscosity at 380°C of the molded article is at most 2×10^{10} poise.

Claim 3. The molded article according to claim 1, wherein the block deformation amount is more than 0.7%.

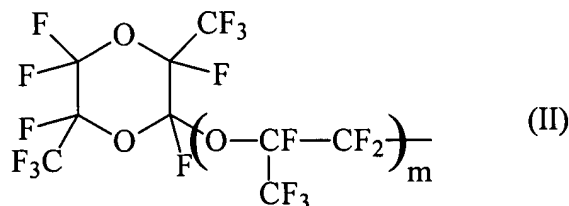
Claim 9. The polytetrafluoroethylene block-shaped molded article of claim 1, wherein the polytetrafluoroethylene powder in said polytetrafluoroethylene block-shaped molded article is a copolymer of tetrafluoroethylene and another fluoromonomer.

Claim 10. The polytetrafluoroethylene block-shaped molded article of claim 1, wherein the polytetrafluoroethylene powder in said polytetrafluoroethylene block-shaped molded article is a copolymer of tetrafluoroethylene and another perfluorovinylether of the formula (I):



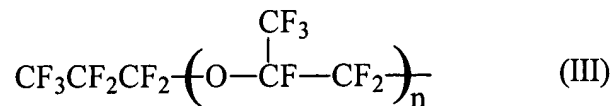
wherein R_f is

- a perfluoroalkyl group having 1 to 10 carbon atoms,
- a perfluoro(alkoxyalkyl) group having 4 to 9 carbon atoms,
- a group represented by the formula (II):



wherein m is a number of 0 to 4, or

a group represented by the formula (III):



wherein n is a number of 1 to 4.

Claim 11. The polytetrafluoroethylene block-shaped molded article of claim 1, wherein the polytetrafluoroethylene block-shaped molded article has a roundness degree of not more than 5.0%.

Claim 12. The polytetrafluoroethylene block-shaped molded article of claim 1, wherein the polytetrafluoroethylene block-shaped molded article has a roundness degree of not more than 0.3%.

Claim 13. The polytetrafluoroethylene block-shaped molded article of claim 1, wherein the polytetrafluoroethylene block-shaped molded article has a deformation degree of not more than 15%.

Claim 14. The polytetrafluoroethylene block-shaped molded article of claim 1, wherein the polytetrafluoroethylene block-shaped molded article has a deformation degree of not more than 1.0%.

Claim 15. The polytetrafluoroethylene block-shaped molded article of claim 1, wherein the polytetrafluoroethylene block-shaped molded article has a bend of not more than 2.0%.

Claim 16. The polytetrafluoroethylene block-shaped molded article of claim 1, wherein the polytetrafluoroethylene block-shaped molded article has a bend of not more than 0.1%.

Claim 17. The polytetrafluoroethylene block-shaped molded article of claim 1, wherein the height of said polytetrafluoroethylene block-shaped molded article is 20 cm to 150 cm.

Claim 18. A polytetrafluoroethylene block-shaped molded article, said molded article is produced by a method comprising:

inserting a polytetrafluoroethylene preform obtained by compression-molding a polytetrafluoroethylene powder, into a pipe in a state in which a symmetry axis of the preform is horizontal; placing the pipe on two rolls spaced apart in a horizontal direction; and heating the preform to bake the preform while rotating the pipe and the preform by rotating at least one roll to transmit a rotation of the roll to the pipe, wherein the polytetrafluoroethylene block-shaped molded article is produced, said molded article is cylindrical, has a height of at least 800 mm, and has a melt viscosity and a block

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deformation amount contained within a polygonal region surrounded by a straight line A: $x = 1.0 \times 10^9$ (melt viscosity of 1.0×10^9 poise), a straight line B: $x = 2.5 \times 10^{10}$ (melt viscosity of 2.5×10^{10} poise), a straight line C1: $y = 7.0$ (block deformation amount of 7.0%), a straight line D1: $y = 0$ (block deformation amount of 0%), and a straight line E1: $y = -8.7 \log_{10}(x) + 91$ in a graph with an x-axis being a common logarithm of the melt viscosity (poise) at 380°C of polytetrafluoroethylene and a y-axis being the block deformation amount (%) which is a weight loss until a stable film or sheet can be cut from the molded article.